REMARKS

In response to the Office Action dated April 6, 2004, the Applicant submits this Reply. In view of the foregoing amendments and following remarks, reconsideration is requested.

Claims 1-14 remain in this application, of which claims 1 and 8 are independent. No fee is due for claims for this amendment.

In the foregoing amendments, claims 1, 5, 8, 12 and 14 have been amended and claims 15-16 have been cancelled. The remaining claims are unchanged.

Amendments to the Specification and Drawing

The Applicant has amended the specification on page 4 to correct the description of Fig. 2. The Applicant has amended the specification on page 4 also to update the status of the patent applications referenced on that page. Fig. 2 has been amended to add a missing reference numeral 13.

Claim Objections

The Office Action objects to the claim language "single channel image." The examiner interpreted the claim as meaning "generating an image." However, it is common to refer to images as having one or more channels, which is the number of values used to represent each pixel. For example, an RGB image has three channels (red, green and blue), and a red, green and blue value for each pixel. If an additional alpha channel is available, the image has four channels. See, for example, U.S. Patent 5,715,073 ("Miller"), which refers to different color channels. Thus, one of ordinary skill in this art would understand that "a single channel image" uses only one value to represent each pixel. As noted in claims 1-14, this single channel image is generated "according to a function that measures, for each pixel, occurrence of a desired characteristic, other than luminance alone, in the input images at each pixel location to provide a value for an output pixel in the single channel image from a range of values." The claims have been amended to clarify that there is a "single value" for each pixel. Accordingly, the objection is traversed.

The Office Action objected to the use of "the first image" and "the second image" in claim 5. The foregoing amendments overcome this objection.

The foregoing amendment also overcomes the objection to claim 14.

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Claims 5 and 12 both recite "using the estimate of motion to generate several images from the first image to the second image." The Office Action required clarification. This language is found in the summary at page 3, lines 1-2. Page 4, lines 11-19 describe some operations that may be performed on two images using motion estimates, and in particular references a patent application, incorporated by reference, that describes "interpolation of a sequence of images." Interpolation of images involves generating at least one image between (in time) two other images. The language of these claims has been amended accordingly.

Rejection Under 35 U.S.C. §102

Claims 1, 2, 4-6, 8, 9 and 11-13, of which claims 1 and 8 are independent, were rejected under 35 U.S.C. §102(e) in view of U.S. Patent 6,477,279 ("Go"). The rejection is respectfully traversed.

According to Go, "edge images" Sh and Sv are generated. This pair of edge images is essentially a two channel image, because both images are required to compute motion, and each pixel of the input images is defined by two values. Thus Go does not generate a single channel image as claimed.

Furthermore, Go teaches that motion is estimated using "block matching", as describe Col. 17, line 63, to Col. 19, line 5, which is a form of correlation based measurement. This block matching process is not "gradient-based" and is not based on a "constraint that a total of the desired characteristic is constant from one image to a next image," as claimed, also referred to in one embodiment in this application as the "constant edge constraint." See original claims 15 and 16, page 1, lines 17-19 and page 7, lines 13-15.

Accordingly, claims 1 and 8 are patentable over Go. The remaining claims are dependent claims that are allowable for at least the same reasons.

Rejection Under 35 U.S.C. §103

Claims 3, 7, 10 and 14, all of which are dependent claims, were rejected under 35 U.S.C. §103 in view of Go and U.S. Patent Publication 2002/0159749A1 ("Kobilansky").

The rejection is respectfully traversed.

These claims are allowable for at least the same reasons as the independent claims as noted above.

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Moreover, although Kobilansky teaches estimating motion of regions in an image by assuming that some image properties, such as color, are close between a region in a reference image and a corresponding region in a target image. Kobilansky does not appear to generate a single channel image based on color proximity. Kobilansky also does not appear to computer motion using a gradient-based method and using the single channel images generated from two input images.

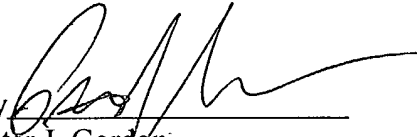Accordingly, claims 3, 7, 10 and 14 are distinguishing over Go and Kobilanksy.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this reply, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, please charge any fee to **Deposit Account No. 50-0876.**

Respectfully submitted,

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